

viranatura 
tours

**AMAZING ATACAMA
NORTHERNCHILE**

2022

Day 1 4 November To Ovalle, Chile

Everyone arrived, as did (eventually) their bags and after slow car rental procedures we were off north along the Ruta 5, passing roadsides glowing with California poppies and stands of columnar *Leucostele chiloensis* cacti. After a revitalising lunch at a service station we drove on stopping for *Alstroemeria pulchra* and *Leucocoryne vittata* growing in a roadside eucalyptus grove. There was the bonus of a flowering *Puya chilensis* too and a fair smattering of *Clarkia tenella*, though these and the *Alstroemeria* were in bounteous abundance at our main stop in Los Molles. Here a valuable local reserve held an excellent slice of coastal matorral flora with masses of *Alstroemeria pulchra* throughout the shrubberies and bursting from every corner it seemed. Here, *Clarkia tenella* took on a prostrate form and there were plentiful deep blue *Pasithea caerulea* too. Impressive stands of *Puya venusta* had some good heads of deep velvet-blue flowers standing above the mounds of spiny grey-green foliage. This endemic bromeliad was one of the star turns, the other no doubt was *Alstroemeria pelegrina*, a waxen delight that grew close to the coast, indeed some were flowering contentedly in the beach shingle. On the rocks were both *Oxalis mirabile* and the cactus *Eriosyce chilensis* with bright pink flowers. It was a superb stretch of rocky coast with neotropical cormorants, blackish oystercatchers and Chilean seaside cinclodes also putting in an appearance.

All too soon it was time to depart we still had a stint of driving and we made it to our hotel in reasonable time where a large llama was in residence, peering through the window at the new guests settling down for dinner.

Day 2 5 November Fray Jorge & Mineral de Talca

Best laid plans and such, an unexpected strike by Chilean national park workers meant we were not going to see the relict laurel forests of Fray Jorge after all. Undeterred we drove the road in to the park gate, stopping for the cactus parasite *Tristerix aphylla*, which grew on *Leucostele skottsbergii*. A few *Eriosyce aurata* barrels were here too, festooned with rings of marshmallow flower buds. There were many more of the same and much larger specimens too at our next stop but we could not find an open flower. They were impressive plants



Alstroemeria pelegrina

nonetheless and there were floriferous bushes of *Senna cummingii* and *Fabiana viscosa* as well as a smattering of pretty *Schizanthus carlomunozii*.

We moving onto the park entrance stopping for a few *Leucocoryne purpurea* (we need not have bothered), *Conanthera campanulata*, *Zephranthes phycelloides* and *Alstroemeria magnifica*, but the horseflies (tabanos) were horrendous and there was no way we could stay. Retreating, we stopped briefly for a good display of *Solanum maritimum* and *Senna cummingii*, but the flies were still too many so we drove on leaving more fiery *Zephranthes* behind and continued until we reached the horsefly free breezy flats near Mineral de Talca. Here our flower experience (and comfort) transformed.

Lunch was sheltered in a grove of eucalyptus and all around on the flat and expansive matorral were delightful drifts of *Leucocoryne purpurea*, with thousands spread across the area. Closer to the abundant jumbles of spiny *Puya chilensis* was the vibrant pink of beautiful *Alstroemeria magnifica* and these were equally common, and at times *Alstroemeria* and *Leucocoryne* mixed together in a lavender-cerise duet. Looking closer at the matorral we found a population (or two) of pretty golden-centred violet *Calydorea xiphioides* a rather crocus-like geophyte. Time was spent exploring the whole site, moving across to where stands of *Leucostele skottsbergii* were flowering very strongly, some with a dozen big tubular white flowers, ringed by lovely colour forms of *Alstroemeria magnifica*. Bushy plants of bright yellow *Calceolaria ascendens* (?) scrambled into the puyas and Robert found in flower an orchid; *Chloraea blettioides*.

There was time to head for the coast, driving down to a rocky knoll overlooking the ocean. The columnar cacti here were thickly plastered in an orange lichen and we debated what harm this did them though they seemed healthy enough. Regardless they made for some striking photography. There were big bobbly



Leucostele skottsbergii

mounds of *Copiapoa coquimbana* too, beset with yellow flowers and great views along the coast. One area had plentiful white-flowered *Loasa elongata* trailing into the cactus spines, whilst flatter places had the sprawling mats of *Nolana caelestis* (?) and we found a particularly fine specimen once we had driven back up with flowers twice the size of those lower down.

By now it was pisco o'clock and time to head home.

Day 3 6 November Hurtado and Vicuna

Today was not a day of straight roads. From the outset we wound our way along pleasant valleys filled with vineyards and orchards and through small villages still waking up on a Sunday. After an hour we stopped at a small reserve at Pichasa with an area of foothill matorral to explore. We set off on a walk and almost immediately found a good patch of pretty golden *Alstroemeria x chrysantha*, a natural hybrid between *A. diluta* and *A. kingii*. Low-growing golden-yellow *Chaetanthera glabrata* was also widespread and there were some good flowering *Leucostele chilensis* and drifts of *Helenium sp.* Here and there was *Eulychnia acida*, somewhat similar to the *Leucostele*, but the flowers lack tubes, the spines tended to point downwards and they branch freely into wider tree-like forms. More good *Alstroemeria* were found and there was low-growing *Malesherbia sp.* and various woody plants such as xxx and xxx as we wandered back finding a colony of *Eriosyce curvispina* tantalisingly in bud.

Moving on we hadn't gone that far when the lovely *Alstroemeria leporina* brought us to a halt. The flowers were a fresh crisp pink with a prominent yellow mark. With them grew the unusual legume *Erazurizia multifoliata*, with narrow racemes of yellow and purplish flowers. A good number of bends later we finally turned off the main road and began to climb, stopping next for a population of *Aristolochia chilensis* sprawling over the stony ground. There was also a feisty white-flowered *Loasa prostrata* scrambling over the ground with them. A bit higher up and the pretty *Alstroemeria schizanthoides* grew in scree near bushy *Calceolaria collina* (?), the former with similar colouration to *A. leporina* but with much smaller flowers in neat umbels. The road climbed higher into the rocky, cactus strewn hills to a pass where a rather battered shelter served us well enough as a shady lunch spot, the cooling breeze helping too. *Schizanthus alpestris* was plentiful on the slope



Schizanthus integrifolius

above.

After lunch, we back tracked a little to an area with large golden barrels of *Eriosyce aurata* (including one with a flower) and then climbed back up and over the pass stopping just a short way down for more fine *Alstroemeria leporina*. The road descended through dry country passing by deep cut gullies with low cliffs that were being used by burrowing parrots for nesting sites and we had superb views of five pairs of these, perched on cacti, wires and on the ground. A colony of *Schizanthus integrifolius* was on a sloping bank (together with smaller *S. alpestris*), the elegant white flowers with long tubes. It wasn't much farther down to Vicuna and our pleasant hotel with courtyard ideal for sitting and enjoying a refreshing beer.

Day 4 7 November Paso Laguna Negra

The original plan had been to take the scenic and botanically rich road to Laguna Negra. On the way up we briefly stopped for the very spiny *Eriosyce erysiozoides*. Unfortunately, the road to the pass was closed to us because of ongoing work and despite trying to talk our way in we had no option but to fall back on plan 'B'. This too had its issues, with us needing to back track to a run down shack-cum-shop to register and pay an entrance fee to the hot springs, the upside being seeing the impressive rock strata of granites pierced by various intrusions in good light. Running back and forth with a key for the gate followed and then we were in, stopping shortly after for a view of the coloured rocks and finding a few *Chaetanthera kalinae* at the same time.

We climbed steeply towards the hot springs with commanding views all around, though it was not overly flowery. Lunch was at the hot springs, a rather run down affair and you really would be desperate for a bath to want to get in. *Lupinus microcarpus* was in flower beside the pools and this plant was very common throughout the afternoon. As we ate lunch rufous-collared sparrows, common miner and grey-hooded sierra-finch all came in for a dorito crumb or two.

Driving back down we made a series of stops some for the impressive landscape with multicoloured hills and increasingly dramatic cloud formations above. There was a smattering of small alpinines with the



Cruckshanksia hymenodon

fringed flowers of *Schizopetalon rupestre* growing with the lovely rosettes of *Chaetanthera flabellifolia*, a purplish-pink *Tarasa sp.* and neat little clusters of white *Oriastrum pusilla*. Lower down *Doniophyton werdelii* was in flower and after a stretch with flowerless screes we found clumps of *Argylia potentillifolia* and *Cruckshankia hymenodon* and photographed these while the second part of the key shenanigans played out.

The drive back was smooth and swift with the light illuminating the windbreaks and protective screens around the many vineyards and orchards like glowing outside spider webs.

Day 5 8 November Paso El Tofo & Punto Choros

Wow! What a flower day this was. After some essential shopping we made our way along the coast where there was an obvious lushness, with every bush of white *Bahia ambrosia* in flower and increasing quantities of *Alstroemeria magnifica*. A pull-in gave us the chance to explore an area crammed with thousands of these stunning flowers. A roadside bank a bit farther up had an even denser mass of *A. magnifica* (if only we knew what was coming) and we stopped for this with both deep pink and light pink forms. Turning off we made our way along a back road where the displays of alstroemeria were gobsmacking, and they crowded every rocky knoll and slope. *Loasa tricolor* was also in good form and its cousin *L. elongata* was superb scrambling among *Plectocephalus floccosus* close to where we found a pure white form of *Alstroemeria magnifica*. Another stop was for the abundant *Balbisia peduncularis*, each bush packed with golden goblet flowers and with these grew the gangly limbs of *Oxalis gigantea*, an interesting 'umbrella-like' *Cistanthe*, *Mirabilis prostratus* and *Chaetanthera glabrata*.

Finally reaching the road to the pass we climbed into fog-shrouded lushness, stopping at a layby for lunch. The slopes were only half visible and we climbed up to enjoy the richness, getting wet trousers in the process. Shrubby *Calceolaria collina* was crowded with flowers and of course *Alstroemeria magnifica* was everywhere. Reaching the top of the pass these continued a little on the other side, wherever the influence of the fog gave them enough moisture. Lower down on drier, rocky slopes was the gorgeous *Alstroemeria schizanthoides* var. *alba* growing



Alstroemeria magnifica

amidst a quartet of cacti; *Copiapoa coquimbana*, *Eulychnia acida*, *E. castanea* and *Miquelopuntia miquelii*. A flowering *Tristeria aphylla* was found on one columnar cactus and there was a fine floriferous bush of *Cordia decandra* too.

We tried to reach the main road but were held up by hundreds of *Zephranthes advena* that were scattered across the open ground in a wide variety of colour forms. Luckily, there was still time for one last beauty and we made our way towards the coast stopping in an area of dunes where there were a good many fine *Alstroemeria werdermanniana* var. *flavicans*. From here it was ears pinned back and a two hour drive to Vallenar, where dinner was rather slow in arriving for some of us.

Day 6 9 November Llanos de Challe

If yesterday had been flower-packed then today took it up a notch. Not far from the hotel a stony bank had hundreds of golden *Alstroemeria kingii* flowering amidst spiny mounds of *Copiapoa coquimbana* f. *alticostata* and *Eulychnia acida* with the sulphurous *Cruckshanksia pumila* thrown in. A side track led to where a few *Alstroemeria philippii* were still in flower too. Our next *Alstroemeria* was just beyond Huasco, where reddish-violet *A. werdermanniana* grew in dunes with creamy *Plectocephalus gayanus*, a rather lovely silvery leaved shrub. Dodder scrambled over just about anything.

We continued along the coast past big dunes and rocky slopes, ignoring what seemed like a lot of *Zephranthes bagnoldii* and other delights. Fear not. Stopping just before the national park there was a fabulous show of cerise *Cistanthe longiscapa*, mixed in a riotous blend with the colours of *Zephranthes bagnoldii*, even better clumps of *Alstroemeria werdermanniana*, a pretty lilac *Cristaria sp.* and a white *Leucheria cummingii* in all sorts of fine combinations, all backed by the blue waters of the Pacific.

Lunch was with superb big mounds of *Copiapoa dealbata* (some with two hundred heads) and floriferous *Cistanthe laxiflora*, bursting with intense magenta flowers. Woolly-calyced *Eulychnia breviflora* were in flower among some lovely *Cristaria spp.* and the latter were even more in evident further on. Having passed colourful drift after colourful drift we could resist no more and



Bomarea ovallei

ground to halt beside a dazzling carpet of *Cistanthe longsicapa* growing mixed with a lovely lilac *Cristaria*. And, among all of this was the pretty *Alstroemeria diluta* (pink form) almost unnoticed among the gaudy masses. Not many things could top this but we rounded off the day in a flowery canyon that led to the ocean. On the rocky flanks were hundreds of trailing *Bomarea ovallei*, each bearing a sphere of blood red flowers, all in perfect condition. A stunning and rare plant, they tumbled over heavy screes and slopes with *Copiapoa echinoides*, *Argylia radiata* (orange form), *Schizanthus candidus* and the familiar pink of *Cistanthe longsicapa* in dazzling valley display.

By now it was late afternoon and time to make our way to Copiapo. Vast sheets of *Cristaria* dressed the landscape in gentle lilac-pink as we drove, the flowers already closing for the day. We had timed our botany rather well and seen all of our plants at their peak.

Day 7 10 November Laguna Santa Rosa

A pre-dawn start was needed to make the most of today and we saw the light begin to illuminate the coloured hills as we made our way east. It was still fairly cool when we made our first stop for a few spreading plants of *Malesherbia lirana* with large white flowers. Similar *M. lirana* var. *atacamensis* was next, these with dense spikes and a second population was beautifully lit in the early sunlight. We were climbing steadily and reaching around 3000 metres we stopped where some *Cumulopuntia boliviana* were growing on well positioned rocks with views down the valley. There were dense stands of *Cortaderia speciosa* choking the stream and on the scree and rubbly slopes we found a good number of *Chaetanthera lanata*. Unfortunately these had yet to open, but were starting to do so, so we waited half an hour. It was worth the wait and three or four plants had opened by the time we left, the white daisy flowers set in attractive and variable woolly foliage.

Golden grasses crowded the valleys and there were big views from the 4100-metre pass across the multicoloured landscape, hemmed by a row of tall peaks to the east (Tres Cruces) and down towards the salt fringed Laguna Santa Rosa. We had lunch here, watching flamingos, coots, Andean gulls and various ducks. Another viewpoint gave a fuller impression of the overall size of (what is a modest salt pan by Andean standards) and then we drove on, cutting across a gravel plain with blue pools piercing the salt crust in places. Once more heading into the mountains we stopped for *Calceolaria*



Chaetanthera lanata

pinifolia growing on some rocks and then some rather fun ice sculptures, formed from the rapidly melting snow. Another big pass (4300-metres) view looked back at where we had come from, the slender road snaking down into a vast landscape.

From here the only way was down and we descended past more coloured strata and complex geology and onto Copiapo in time to relax a little after a long day.

Day 8 11 November Pan de Azucar & Paposo

Today was a lengthy, but rewarding traverse of the Pacific coast. We drove directly along the rocky indented coastline to Chanaral where we stopped for the yellow form of *Cistanthe longiscapa* growing in the dunes near Pan de Azucar. Moving onto the entrance of the national park we spent some time at a large colony of *Copiapoa cinerascens* with dense multi-headed mounds scattered in large numbers across the sands and on the rocks. The similar *C. serpentiuscula* also grew on the coastal rocks as did blue *Nolana rupicola*, a species with striking purple-veined foliage. There were stunning white sand beaches and then a little inland a large colony of *Copiapoa columna-alba*, all the plants leaning in the same direction, the bases chestnut-brown the tops ashen-grey, a few with yellow flowers. Sadly, the thriving *Eriosyce oederi* colony I had hoped to show everyone had been wiped out by illegal collectors with dozens of fresh holes (I had visited the plants only a month ago)! The pointless avarice of collectors escapes me.

After a lunch in the shade we pushed on for a couple of hours, passing through some dramatic desert scenery with red-ridged hills and bleak expanses. Reaching Paposo, we had a long stop at a large colony of impressive *Copiapoa gigantea* and then drove the spectacular coast, stopping for views of sweeping bays, fringed with white sands and backed by soaring rocky ramparts. In one bay, there was the bonus of a noisy gathering of Peruvian pelicans and grey gulls on the rocky shore, with sea lions cavorting out to sea. The views were magnificent and we topped it with a big view of coast from a high vantage before completing the drive to Antofagasta and our hotel, fittingly also beside the ocean.



Peruvian Pelican

Day 9 12 November Toconce

Chile is a narrow country, but today we had to cross the widest bit. So, it was a long stint across the desert, passing on the way huge copper mine tailings that rose as high as munros, the muddled colours a relief from the relentless pale sands. Hills and ridges punctuated this monotony, some struck with bands of colour and in time the Andes became clearer and the landscape more interesting as we pushed onto a lunch stop by a peculiar, oval blue lake that sat incongruously in the desert – Laguna Inka Sayo.

The main event for the day was another forty minutes away, and we climbed to around 3300 metres to a superb cactus area. Here in a complex of outcrops and rocky slopes were the statuesque and iconic *Leucostele (Echinopsis) atacamensis*, very much a Chilean saguaro. Some topped ten metres, though most were shorter and they varied from single columns to strongly branched old plants. Interestingly, the older plants had fine whitish (sometimes orange-tinged) spines, but the young plants bore formidable heavy spines, no doubt to deter wandering vicunas or guanacos. Various populations were scattered throughout the area, here and there clustered into stands, but generally spread across the landscape. And what a landscape, with the ochre-and-tan hues of the Andes soaring up beyond. *Leucostele atacamensis* is only readily found in this area of Chile and across the border into Bolivia and Argentina. Closer examination of the scrubby slopes revealed a second rarer species; *Soehrensia formosa* (formerly also *Echinopsis*), a shorter cactus with reddish spines and rich yellow flowers. Common throughout were the heavily-spined domes and irregular mounds of *Cumulopuntia boliviana*, their flower colour varying from yellow-green to yellow or pinkish-yellow. What is more intriguing with this species is how their colour changes, the red-suffused spines creating glowing orangey mounds with backlight, which disappears the instant one views them from the other direction. This is one of the most obvious species in this region and we would see many more.

After looking at various populations and finding a *Soehrensia formosa* in flower it was time to complete our journey and a 'short cut' took



Leucostele atacamensis

us across country, traversing increasingly dramatic scenery with canyons and eroded landforms, volcanic cones and warm-toned ridges. Nearing the touristic honeypot of San Pedro de Atacama, we passed crowded viewpoints awaiting the sunset. Tomorrow we would take a different more exclusive approach. Not long after we arrived at our pleasant hotel with adobe-style bungalows set in attractive gardens and giant pepper trees.

Day 10 13 November Paso Jama

The early bird gets the worm, but if not it at least sees the sunrise and for those that were up early enough we drove out to a viewpoint across the eroded confusion of ash ridges and buckled strata in time to see the sun rise across it, casting edge-defining shadows and bringing warm tones to the fore. And there was barely a soul around to spoil the peace.

Back in time for breakfast we then set off for another of Chile's scenic spectacles, taking a remarkable road that steadily climbed for 2200 metres, much of it in a straight line. The glowing (reddish) mounds of *Maihueniopsis glomerata* looked wonderful in backlight and the same light was also improving the colours of Volcan Licancabur and making the ubiquitous golden grasses begin to glow. This would be even better in the afternoon, so we pushed onto the pass at 4700 metres for some botanising before the winds picked up in the afternoon. Except the winds had started early and we soon appreciated just how tough these plants were, well adapted to keep out of the elements on the stony flats and slopes. Here were prostrate mats of *Pychnophyllum molle* and a greyish Caryophyllaceae, with wind-blasted old grasses making for attractive photos. The landscape was already vast and expansive with volcanic ridges and richly toned ash fields stretching in every direction.

The day was a series of stops to enjoy this splendour, although the strong winds meant most were short. The altitude rarely dipped below 4500 metres, occasionally dropping to an oxygen-rich 4200 metres at one of the blinding white salt pans. There were some fine areas of bofedale bogs the straw-coloured spikey grasses fringing crystalline pools with amazing rust-toned slopes and hills beyond. Andean flamingos, crested ducks and



Bofedale bog, Paso Jama

Andean Gulls thought nothing of the thin air. We moved from one fine sight to the next, having lunch huddled in the cars at the largest salar. It was here we had excellent close views of Andean flamingo, feeding in shallow pools and struggling at times with the gusting winds, which blew them backwards. It was incredible that such spindly legs could withstand the blasts or air.

The light had changed by the time we headed back and descending to 4000 metres the winds had eased. The light on Volcan Licancabur was better and we stopped to view this and revisit the cacti area where *Trichocline caulescens* had opened its golden daisy flowers and we found an *Caesalpinia sp.* and a wispy *Adesmia sp.* too. We were back in good time, and whilst some opted to relax a bit and get their breath back, a few of us headed into the hills north of the town to another population of *Leucostele atacamensis*, following a stream below the cliffs to where there was a fine stand of very old branched plants, which looked superb with backlight illuminating the spines. One giant must have been ten metres and dwarfed Robert when he stood next to it. There were many other unbranched and little branched plants on the adjacent slopes too and as we returned we found various colour forms of *Cumulopuntia boliviana* from green to red. The light across the extraordinary landscape was picking out the shadows on rippling plains that were riven with canyons and home to many more giant cacti.

Day 11 14 November To Arica

Chile is a very big country, at least a very long one and today was to make that more apparent than any other. For the sake of logistics, rather than mess around with flying backwards and forward to Santiago, we drove from San Pedro de Atacama to Arica, Chile's most northerly city, just a stone's throw from the Peruvian border. If we hadn't seen enough desert by now we certainly had by the day's end.

However, it was not without interest and the vast expanses of apparent lifelessness were punctuated with sudden flushes of green in unexpected valleys or stands of trees that somehow thrived in the saline expanses.



Cumulopuntia boliviana

Refuelling meant a detour to the only remaining nitrate mining town and there was further evidence of the past significance of this activity with numerous signs for 'ex' nitrate oficinas. The landscape was undeniably bleak and quite how workers mined these areas without dying of heatstroke or thirst is a mystery – many probably did. Lunch was in the shade of a huge tree which was also attracting small lycaenids and some handsome blue dragonflies. Sadly, the geoglyph site was closed so we had to view them from afar with an assortment of shapes scattered across the hills.

More vastness and unrelenting desert followed until we reached the impressive canyon country near Cuya, where vast defiles divided the dusty ridges from one another, the scant (largely underground) rivers supporting greenery at the bottom. Eventually we rumbled into Arica and our hotel, perfectly positioned on the rocky Pacific coast.

The Peruvian-inspired pisco sours at our restaurant were probably the best of the trip!

Day 12 15 November To Putre

After a sleep soothed by the rushing waves of the ocean, the morning was greeted by the abundant sea birds along the coast. Hugh and I spent some time photographing these before breakfast. From Arica we drove inland through pure desert which contrasted so sharply with oasis of the Lluta Valley (fed by the melt waters above) that nestled as an emerald streak in the valley bottom. Climbing steadily, our planned stop to see the impressive *Browningia candelaris* was thwarted by road works, which extended virtually the length of their preservation area. They could be readily seen, but it was impossible to stop!

We continued to a scenic overlook for lunch, where three young Andean condors were circling about as we arrived. Then it was on towards Putre. The light was good from the viewpoint above the town with the towering Nevados de Putre rising up above the town. We stopped shortly before the town to look at a variety of plants including *Verbena gynobasis*, *Solanum chilensis*, *Cistanthe amaranthoides* and *Tarasa operculata*. This far



Black-crowned Night-heron (juvenile)

northern corner of Chile has a different climate and is considered altiplano (something we began to see around San Pedro) and the landscape is clothed in puna scrub (above 3000 metres). This region receives moisture from December onwards influenced by the upwellings of the Amazon Basin.

Arriving by mid-afternoon we rested at the hotel until dinner in a restaurant beside the small square and the sky was a fabulous colour when we came out after our meal.

Day 13 16 November Belen Road

Adapting to the altitude is necessary for the forthcoming days, when we would be spending the greatest amount of time in the breathless zone. To facilitate this we spent a day at a modest 3500-metres exploring areas of puna and *Polylepis* woodlands. Driving out the morning light was good for views of the complex landscape with ridges and deep canyons all clothed in puna scrub with little villages nestled in the folds, the residents cultivating the slopes either with terraces or small fields which stood out as emerald patches in the dry landscape. There had been little rain so the puna looked dry, but during the course of the day we found an array of little jewels. This began with a tubular carmine flower of *Oreocereus varicolor*, which briefly drew the attention of a giant hummingbird. On the adjacent slope Chris saw some glowing reddish spines as these turned out to be the scarce *Tunilla chilensis*, a cactus with flattened pads and orangey spines that glow with backlight. On the same slope was the familiar *Cumulopuntia sphaerica* (some with yellow-orange flowers) and some good mounds of *Cumulopuntia boliviana* subsp. *echinacea* with yellow-green flowers. Heftier and rather scruffy *Corrycactus brevistylus* with irregular columns, was scattered about the slope too.

Moving on we stopped for shrubs of *Dunalia spinosa* dripping with pendant purple flowers and then moving on found a couple of *Mutisia acuminata* flowers and a smattering of *Solanum pulchellum*. Cultivated areas had many domes of *Verbena gynobasis*, some much fresher than yesterday. The shrub, *Balbisia microphylla* was common along the roadside, decorated with bright yellow cups and another woody plant; *Baccharis alnifolia* was ubiquitous, appealing to painted lady butterflies and other insects. Another characteristic



Mutisia acuminata

plant of the central Andes is *Polylepis*, and we stopped at an area of *Polylepis rugulosum* woodland some with fine deep-red flaking bark. Lunch was at another overlook and in the puna around it we found the bright red *Mutisia hamata*, *Calceolaria inamoena* and *Chuquiragua spinosa*. A *Mutisia acuminata* with good fresh flowers followed and then we reached an area with the scrambling stems of *Caiophora cirsiifolia* with showy orange flowers.

The journey back produced good stands of *Cortaderia speciosa*, some growing with imposing stands of imposing *Equisetum giganteum*, whilst in the exposed open flats of the stream rivulets were mats of yellow *Mimulus glabratus* (and *Veronica anagallis-aquatica*). The clouds had gathered over the higher peaks during the day and by the time we reached Putre a light shower sprinkled us with something quite unfamiliar – rain.

Day 14 17 November Parque Nacional Lauca

Our acclimatising was to prepare us for two days at high altitude, amongst some of the finest scenery in the Chilean Andes. Even so, the leap from 3500 to 4600 metres still left us breathless and light-headed. Climbing onto the high altiplano plateau, we passed through a canyon which opened up into slopes peppered with the large bright green organic forms of *Azorella compacta*, the irregular mounds often enveloping rocks and growing with them were flatter spreading mats of *Pychnophyllum molle*. In the bogs and streamside below was an interesting assortment with many fine mats of *Werneria aretoides* in both white and pinkish forms, golden mats of *Senecio algens* and a yellow Brassicaceae; *Eudema friesii*. Small whitish butterflies zipped about in the morning sunshine.

An area of boulder strewn slopes surrounding another large bog gave us excellent close views of mountain vizcachas and a herd of vicunas was contentedly grazing nearby. On the dense bog hummocks were the blue stars of *Gentiana prostrata* and the crinkled leaves of *Nototriche compacta* grew on bare slopes. Cresting a rise we were confronted by the imposing bulk of 6380-metre Volcan Parinocota, capped in snow next to its twin Volcan Pomerape a mere 6282-metres tall. They stood aloft and imperious above an already the vast landscape. A side road led through rocky hills



Cumulopuntia boliviana



Volcan Parinacota



Azorella compacta

and large bogs dissected with sinuous streams and pools where we saw Andean geese, puna ibis, crested ducks and many domesticated alpacas (and a few llamas). A larger pond held several giant coots and their large water weed nests too. A short visit to the nearby (tiny) village of Parinacota and its pretty church threw up the unexpected chance to get online, with the only wi-fi we had encountered in the area! Despite initial suspicions the wi-fi zone sign was genuine and not a ruse for gullible tourists. It was difficult to pull everyone away from this sudden rush of connectivity – who says the younger generation are glued to their phones! Returning to the bogs and slopes we found a flowery mound of *Cumulopuntia boliviana* subsp. *ignescens* studded with a dozen fiery red flowers (that were irresistible to bees) as well as fine flowering cushions of *Azorella compacta* and some other diminutive bog land plants. Then just a short distance farther on Robert spotted two Andean flickers perched (or rather hanging) from cliffs near their nest holes (these high altitude woodpeckers use soft ash instead of tree in which to hack nest holes) and we had an excellent close encounter with these.

Lunch was in an area of rocks where we found not only more flowering

cacti, but the lovely *Caiophora rosulata*, the rosettes of spiny leaves embellished with inflated scarlet flowers. By now, blue skies had turned to decidedly grey ones with rolls of thunder and bolts of lightning coming down on the distant altiplano and though we dodged the rain it was now breezier and cooler. There followed a series of viewpoint stops to take in the magnificent scenery of volcanos, complex lakelands and slopes peppered with high altitude *Polylepis tarapacana* forests (John later gave an insightful short talk on why this tree is such an enigma, managing to grow at such altitudes despite the temperatures and precipitation it receives suggesting it is impossible – it is still unknown as to how they do it).

The final stop was beside the large Lago Chungara, the shores thronging with giant coots, silvered grebes, crested ducks and puna teals. Onshore there was the chance to look closer at the dwarf *Polylepis tarapacana* forests with wonderful exfoliating coppery-red bark. A pair of Andean gulls strutted about the car park as we got ready to leave after our scenic extravaganza, after quite enough high altitude, so it was back to Putre where the extra oxygen at a mere 3500 metres was welcome.

Day 15 18 November Salar de Surire

The final field day explored the fabulous altiplano landscapes to the south of Volcan Parinacota, which itself was a magnificent and imposing start to the day with clear views and perfect reflections in the calm lake as myriad birds swam, flew, fished and mooched about on the waters. More birds followed with excellent Chilean and Andean flamingo views at a smaller lake where an agitated Andean gull buzzed the photographers. It was a very wildlife day with many vicuna and a couple of handsome puna rhea seen well in the vast landscape of countless grey-green, pointed tufts of *Festuca xxx* sweeping across to the slopes of 6017-metre Volcan Guallatiri, giving a distinctive rather rough texture to the broader landscape. The volcano produced periodic puffs of steam from an upper vent.

On an outlook ridge that commanded views across a vast area, there was an abundance of *Azorella compacta* and flatter *Pycnophyllum molle*. Lower down and prominent rusty mounds of *Cumulopuntia boliviana* subsp. *ignescens* had a fair smattering of red flowers. The quieter side road eventually linked with

the better ‘main road’ which had plenty of trucks hauling borax running along it. A stop at the tiny village of Guallatiri once again threw up the chance to get online(!) as well as offering great views of the namesake volcano and herds of alpaca nibbling on the bofedale bogs. Indeed, alpaca were abundant with big herds everywhere, often mingling with their wild cousins; vicuna. More puna rhea and Andean geese sightings followed as we passed through an area of fine-strata badlands with pinkish and cream rock layers. The road continued to snake over the huge landscape, eventually cresting a ridge where we could see the blinding white expanse of Salar de Surire.

Lunch was at a good look out across the salt flats with a herd of vicuna along the shore when we arrived and many flamingos further offshore. A worrying light on the car meant we abandoned the planned circuit of the salt lake and instead made more stops for flamingo along the shore and then for a huge agglomeration of already very large *Azorella compacta*, the largest so old they had been seeded into by their own kind with younger plants growing on them. The weather had again changed dramatically and Volcan Guallatiri was now wrapped in moody grey clouds.



Caiophora rosulata

The skies were clearer elsewhere, the sun illuminating canyons and pink cliffs flanked with bofedale bogs riven with silvered pools. Several herds of vicuna were seen both here and along the road at close range as we completed another scenic day that only reinforced the splendour of a country that is seldom visited, but undoubtedly offers some of the grandest landscapes (and finest flowers) anywhere in the world.

Day 16 19 November To Santiago

That was it we had quite simply run out of Chile! There was nowhere else to go, no farther north to drive (possibly a good thing) and the only way was south. Unfortunately, Chilean road works meant we couldn't risk missing the flight so left very early to get down in good time before they started working and traffic hold ups began as a result. The first part was in the dark and then as dawn revealed the landscape a few silhouetted *Browningia candelaris* were seen on the ridges as the desolate folded alabaster hills coloured with rose tints.

Cars deposited at the airport for someone else to drive back to Santiago (22 hours away) we had breakfast in the car park(!) checked in and took the flight to the capital, where dust was washed out of our hair (for some of us at least) and we enjoyed our final meals together.

Day 17 20 November Flights home

Big breakfast over, it was time to check in and head home after another Chilean rollercoaster ride of scenery, amazing flora and some cute fluffy creatures. As for me I flew onto to Costa Rica via Lima and landing in Lima (hundreds of kilometres to the north of Arica) in the now familiar and austere landscape, overcast with grey clouds, only reinforced the vast extent of the Amazing Atacama, which continues all the way to Ecuador!

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